

Project No. 1251-100

Crude Oil Tank Farms Project, Agrood Area 30 (Module-1)



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

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2	Ready for Startup Certificate (RFSU)	
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Sr.	Pre-Commissioning and Commissioning Dossier Index	Applicable (Yes/No)
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Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

### 1-Mechanical Completion Certificate (MCC)



## SYSTEM MECHANICAL COMPLETION CERTIFICATE (MCC)

PROJECT TITLE : CRUDE OIL TANK FARM PROJECT (AGROOD AREA)

PROJECT No : 01251-100


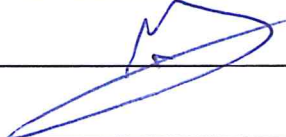

SYSTEM NAME : Substation 6.6KV High Voltage Power Factor correction System

SYSTEM ID : 030-EL-003

### THIS IS TO CERTIFY THAT:

- THE ABOVE SYSTEM HAS BEEN FABRICATED, ERECTED, INSTALLED AND TESTED TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS, SPECIFICATIONS, THE APPLICABLE CODES AND STANDARDS.
- ALL PRE-CONSTRUCTION RELEVANT ACTIVITIES, TESTS, INSPECTIONS AND CHECKS HAVE BEEN CARRIED OUT FOR THIS SYSTEM AND FOUND ACCEPTABLE.
- Q/C DOCUMENTATION OF THE ABOVE SYSTEM HAS BEEN AUDITED BY THE CUSTOMER SITE QUALITY CONTROL AND FOUND COMPLETED.
- ALL PUNCH LIST ITEMS CATEGORY (A) IN THIS SUBSYSTEM WERE CLEARED.
- THIS SYSTEM IS MECHANICALLY COMPLETED ON THE DATE \_\_\_\_\_ AND READY FOR COMMISSIONING (RFC) WITH THE FOLLOWING EXCEPTIONS.

### EXCEPTIONS :

COMPANY	PETROJET	ENPPI	PMC
NAME		Mohamed Abbar	
TITLE			
SIGNATURE			
DATE			





Project: 01251-100  
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System ID	030-EL-003
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## 2- Ready for Startup Certificate (RFSU)



## READY FOR START UP CERTIFICATE

PROJECT TITLE : EGPC CRUDE OIL TANK FARMS PROJECT (AGROOD-30)

PROJECT No. : 1251-100




SYSTEM /AREA /PLANT : Substation 6.6KV High Voltage Power Factor Correction System

SYSTEM /AREA /PLANT No. : 030-EL-003

### THIS IS TO CERTIFY THAT:

- THE MENTIONED SYSTEM /AREA /PLANT IS READY FOR START UP WHERE ALL MECHANICAL WORKS, PRECOMMISSIONING AND COMMISSIONING ACTIVITIES HAVE BEEN SUCCESSFULLY COMPLETED.
- MECHANICAL COMPLETION CERTIFICATE(S) FOR THE MENTIONED SYSTEM / AREA / PLANT HAVE BEEN SIGNED.
- ISSUANCE OF THIS READY FOR START UP CERTIFICATE(S) SHALL NOT RELIEVE CONTRACTOR(S) FROM THEIR OBLIGATIONS TO COMPLETE THE REMAINING SYSTEMS NOR FROM THEIR WARRANTY OBLIGATIONS AND OTHER PROVISIONS OF THE CONTRACT.
- THE FOLLOWING EXCEPTIONS AGREED TO BE CLEARED AFTER START UP AND WILL NOT PREVENT START UP ACTIVITIES.

### EXCEPTIONS :

COMPANY	ENPPI	PPC
NAME	Ahmed El shafie	Mohamed Ibrahim
TITLE	Commissioning Manager	elec. eng.
SIGNATURE		
DATE	18.11.21	








Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
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### 3- System Punch Lists

COMPANY	PTJ	ENPPI	PMC
NAME		<i>René</i>	
SIGN.			
DATE			





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#### 4- System Limits Marked Up P&ID



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## 5- System Index



Project: 01251-100  
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System ID	030-EL-003
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## 6- Piping Pre-Commissioning



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
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## 6.01- Piping Test Packs





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
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## 6.02- Piping Pre-commissioning Check Lists



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



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## 7- Piping Commissioning



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
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## 7.01- Service Test, GLT, CLT and N2 Purging Certificates



Project: 01251-100  
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## 7.02- Piping Commissioning Check Lists





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
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Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
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## 8.01- System Mechanical Index



Project: 01251-100  
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System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 8.02- Equipment Drawings



Project: 01251-100  
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System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

### 8.03- Equipment Datasheets





Project: 01251-100  
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System ID	030-EL-003
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## 8.04- Boxing-up Certificates



Project: 01251-100  
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System ID	030-EL-003
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## 8.05- Grouting Certificates



Project: 01251-100  
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## 8.06- Pre-Alignment Certificates



Project: 01251-100  
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## 8.07- Mechanical Pre-Commissioning Checklists





Project: 01251-100  
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## 9- Mechanical Commissioning



Project: 01251-100  
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System ID	030-EL-003
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## 9.01- Final Alignment Certificates



Project: 01251-100  
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## 9.02- Motor Solo Run Certificates



Project: 01251-100  
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System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

### 9.03- Mechanical Run Test (MRT) Certificates



Project: 01251-100  
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## 9.04- Mechanical Commissioning Checklists



Project: 01251-100  
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## 9.05- Mechanical Supplier Check Lists & Reports



Project: 01251-100  
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## 10- Instrumentation Pre-Commissioning



Project: 01251-100  
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System ID	030-EL-003
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## 10.01- System Instrument Index





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## 10.02- Instrument Data Sheets



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### 10.03- Instrument Cable Schedule



Project: 01251-100  
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## 10.04- System Instrumentation Wiring Diagram



Project: 01251-100  
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## 10.05- Hook-up Drawing (Mechanical & Pneumatic)



Project: 01251-100  
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## 10.06- Instruments Cables Schedule



Project: 01251-100  
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System Description	Substation 6.6KV High Voltage Power Factor correction System

## 10.07- Instruments Cables Laying Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



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## 10.08- Instruments Cables Termination Certificates



Project: 01251-100  
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## 10.09- Instruments Cables Testing Certificates





Project: 01251-100  
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## 10.10- Instruments Calibration Certificates



Project: 01251-100  
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## 10.11- Instrument Loop Checks Certificates



Project: 01251-100  
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## 10.12- Instrumentation Pre-Commissioning Check Lists



Project: 01251-100  
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### 10.13- Instrumentation Supplier Check Lists & Reports



Project: 01251-100  
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## 11- Instrumentation Commissioning



Project: 01251-100  
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Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 11.02- Instrumentation Supplier Check Lists & Reports



Project: 01251-100  
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System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 12- Electrical Pre-Commissioning





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 12.01- System Electrical Index

U-U	030-EL-003	Substation 6.6KV High Voltage Power Factor corre	Electrical	030-SUB-PFC-1A	6.6KV High Voltage Power Factor Correction	Form Type	Check Forms ID
030-EL-003	030-EL-003	Substation 6.6KV High Voltage Power Factor corre	Electrical	030-SUB-PFC-1B	6.6KV High Voltage Power Factor Correction	Checklist	EL-021 A /EL-30 A /EL-3:
030-EL-003	030-EL-003	Substation 6.6KV High Voltage Power Factor corre	Electrical	P-030-SUB-PFC-1A	HV Cable	Checklist	EL-021 A /EL-30 A /EL-3:
030-EL-003	030-EL-003	Substation 6.6KV High Voltage Power Factor corre	Electrical	P-030-SUB-PFC-1B	HV Cable	Checklist	EL-31 A
030-EL-003	030-EL-003	Substation 6.6KV High Voltage Power Factor corre	Electrical	CL-030-SUB-PFC-1A	LV Cable	Checklist	EL-31 A
030-EL-003	030-EL-003	Substation 6.6KV High Voltage Power Factor corre	Electrical	CL-030-SUB-PFC-1B	LV Cable	Checklist	EL-31 A
030-EL-003	030-EL-003	Substation 6.6KV High Voltage Power Factor corre	Electrical	C2-030-SUB-PFC-1A	LV Cable	Checklist	EL-31 A
030-EL-003	030-EL-003	Substation 6.6KV High Voltage Power Factor corre	Electrical	C2-030-SUB-PFC-1B	LV Cable	Checklist	EL-31 A
030-EL-003	030-EL-003	Substation 6.6KV High Voltage Power Factor corre	Electrical	D-030-SUB-PFC-1A	LV Cable	Checklist	EL-31 A
030-EL-003	030-EL-003	Substation 6.6KV High Voltage Power Factor corre	Electrical	D-030-SUB-PFC-1B	LV Cable	Checklist	EL-31 A
030-EL-003	030-EL-003	Substation 6.6KV High Voltage Power Factor corre	Electrical	P1-030-SUB-PFC-1A	LV Cable	Checklist	EL-31 A
030-EL-003	030-EL-003	Substation 6.6KV High Voltage Power Factor corre	Electrical	P1-030-SUB-PFC-1B	LV Cable	Checklist	EL-31 A

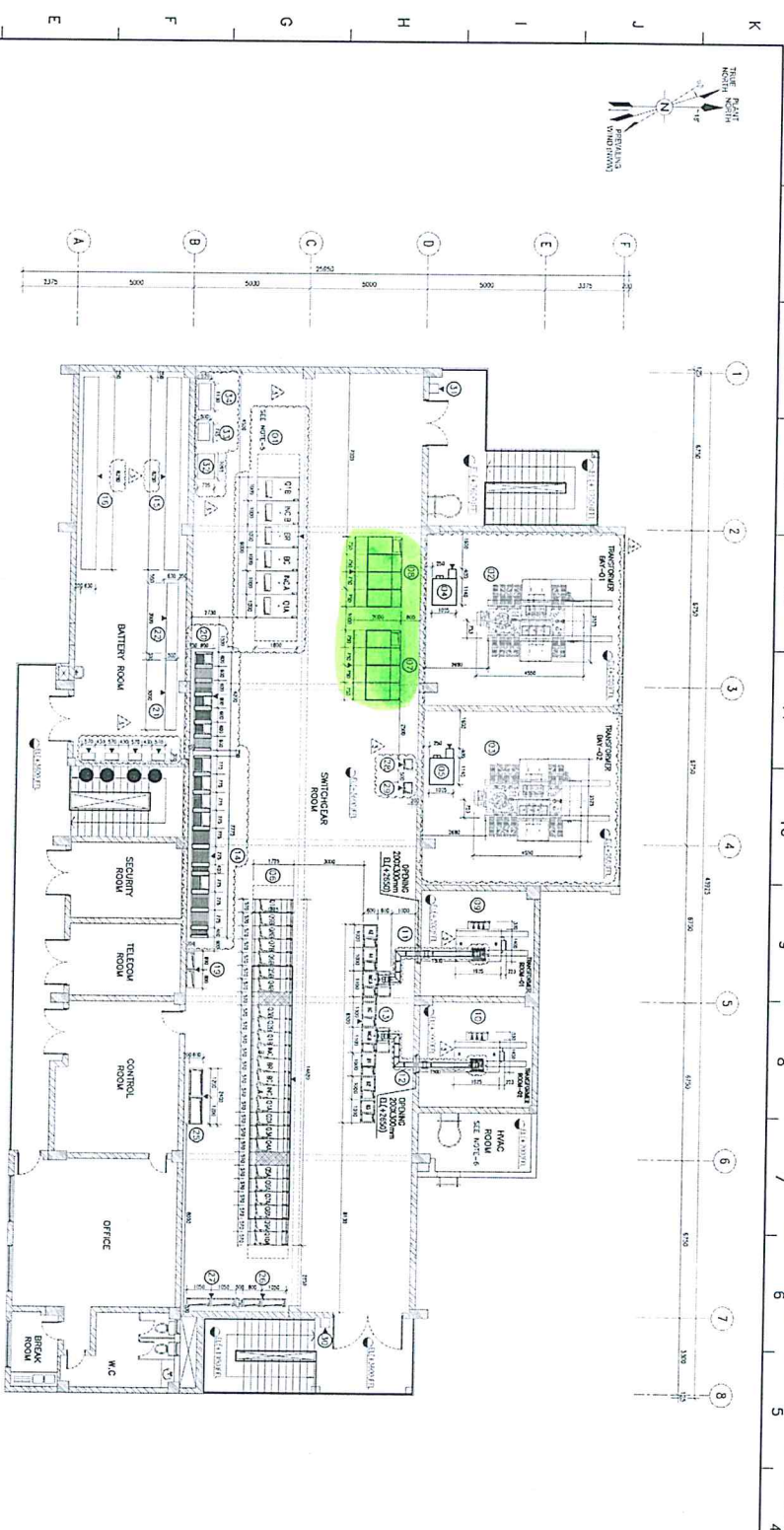


Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
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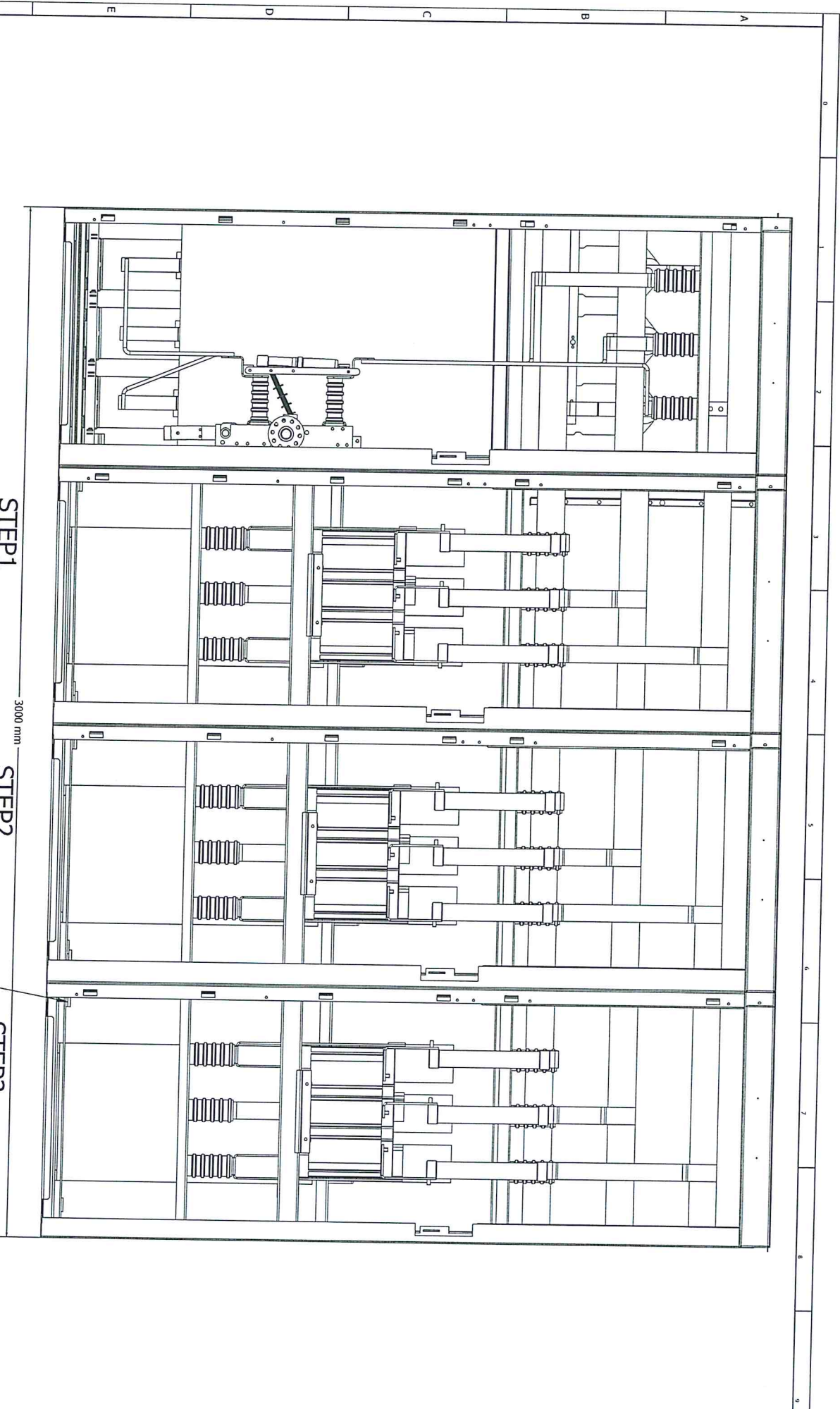
## 12.02- Electrical Drawings

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A vertical number line with tick marks at 13, 14, 15, and 16.







Incoming Cell 1

STEP1  
Capacitor Cell 2

STEP2  
Capacitor Cell 3  
Earthing Bar

STEP3  
Capacitor Cell 4

COMPLETE LAYOUT FOR ALL CAPACITOR CELL WITHOUT DOOR

Date	Rev.	Page revision description	Date	Rev.	Page revision description	Drawn By	Checked By	Specification (Company)	Quantity No.	Order NO.	Customer Name	Page
						Abdullah Heli	Nourhan Osama	01231-100-510-021	02	110-2020	ENBP/EGPC	Total pages
						Designed By	Approved By	TEPCO	Item Number	Item Name	Project Name	Revision
						Sayed Ali	Walid Ahmed	TECHNICAL PROJECTS DEPARTMENT	020-508-47FC-1	51D AND 1000X1000-FC-1	Agfude Oil Tank Farm	











Project: 01251-100  
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## 12.03- Motor Datasheets



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## 12.04- Electrical Cables Schedule









**Enppi**

Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



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## 12.05- Electrical Cables Laying Certificates





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
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## 12.06- Electrical Cables Testing Certificates





EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

CABLE INSULATION RESISTANCE TEST

INSPECTION REPORT NUMBER  
RFL-17

INSPECTION DATE & TIME

DOCUMENT NO  
ITR-EL-0006A

DISCIPLINE  
ELECTRICAL

SHEET NO

INSTRUMENT TYPE:

SERIAL:

SERVICE VOLTAGE:  
220 v

TEST VOLTAGE:  
1kv

AREA / PACKAGE:

N	Item/Tag NO.	CABLE SIZE	Continuity Test	PHASE TO PHASE "M.Ohm"			PHASE TO NEUTRAL "M.Ohm"			PHASES & NEUTRAL TO ARMOR "M.Ohm"				RESULT	
				BR-BK	BR-GR	BK-GR	BR-B	BK-B	GR-B	BR-ARM	BK-ARM	GR-ARM	B-ARM	Pass	FAIL
1	P-030-SUB-PPC-1A	3 x 76	✓	0.1	0.1	0.1								✓	
2	P-030-SUB-PPC-1B	3 x 76	✓	0.1	0.1	0.1								✓	
3	P-030-EPMI-TR-1	3 x 76	✓	0.1	0.1	0.1								✓	
4	P-030-EPMI-TR-1	3 x 76	✓	0.1	0.1	0.1								✓	
5	P-030-EPMI-TR-1	3 x 76	✓	0.1	0.1	0.1								✓	
6	P-030-EPMI-TR-1	3 x 76	✓	0.1	0.1	0.1								✓	
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															

Remarks :-

Reference :-

NAME :	PETROJET	ENPPI	PMC
SIGNATURE			
DATE			



**Enppi**

PETROJET

EGPC CRUDE OIL TANK FARM



EGPC

INSPECTION AND TEST REPORT FOR

**CABLE INSULATION RESISTANCE TEST**

INSPECTION REPORT NUMBER

PTJ-ELE-RFI-

INSTRUMENT TYPE:

HIGH VOLTAGE INSULATION TESTER-SANWA-MG5000

SERIAL:

17015900385

INSPECTION DATE & TIME

10/04/2021

SERVICE VOLTAGE:

24

DOCUMENT NO.

ITR-EL-0006B

DISCIPLINE

ELEC

SYSTEM NO.:

SHEET NO

TEST VOLTAGE:

500

AREA / PACKAGE:

NO	Item/Tag NO.	CABLE SIZE	Continuity Test	pair conductors	conductors to armor	Shield to Shield	All Conductors-GND	Overall Shield-GND	Armor-GND	RESULT
1	C7-030-SUB-HVSWG-	10x2.5	✓	See ✓				>500 MΩ		✓
2	C7-030-SUB-HVSWG-	10x2.5	✓	See ✓				>500 MΩ		✓
3	C1-030-SUB-PFC-1A	3x2.5	✓	See ✓				>500 MΩ		✓
4	C2-030-SUB-PFC-1A	12x2.5	✓	See ✓				>500 MΩ		✓
5	C1-030-SUB-PFC-1B	3x2.5	✓	See ✓				>500 MΩ		✓
6	C2-030-SUB-PFC-1B	12x2.5	✓	See ✓				>500 MΩ		✓
7	C3-030-SUB-LVSWG-1A	10x2.5	✓	See ✓				>500 MΩ		✓
8	C3-030-SUB-LVSWG-1B	10x2.5	✓	See ✓				>500 MΩ		✓
9	C3-030-SUB-ACUPS-1	1x3x1.5	✓	See ✓				>500 MΩ		✓
10	C4-030-SUB-ACUPS-1	1x3x1.5	✓	See ✓				>500 MΩ		✓
11	C3-030-SUB-DCUPS-1	1x3x1.5	✓	See ✓				>500 MΩ		✓
12	C4-030-SUB-DCUPS-1	1x3x1.5	✓	See ✓				>500 MΩ		✓

Remarks :-

Reference

NAME :

PETROJET

SIGNATURE

DATE

ENPP

PMC





ENPPI

EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

CABLE INSULATION RESISTANCE TEST

INSPECTION REPORT NUMBER

PTJ-ELE-RFL

INSTRUMENT TYPE:

HIGH VOLTAGE INSULATION TESTER-SANWA-MG5000

SERIAL:

17015900385

SERVICE VOLTAGE: 400

10/04/2021

DOCUMENT NO.

ITR-EL-0006A

DISCIPLINE

ELECTRICAL

SYSTEM NO.:

SHEET NO

INSPECTION DATE & TIME

TEST VOLTAGE: 1000

AREA / PACKAGE: SUBSTATION

NO	Item/Tag NO.	CABLE SIZE	Continuity Test	PHASE TO PHASE				PHASE TO NEUTRAL "M.Ohm"		PHASES & NEUTRAL TO ARMOR "M.Ohm"				RESULT	
				BR-BK	BR-GR	BK-GR	BR-B	BK-B	GR-B	BR-ARM	BK-ARM	GR-ARM	B-ARM	Pass	FAIL
1	P1-030-SUB-HVSWG-6.6A	4x10	✓	0.1	0.1	0.1	0.1							✓	
2	P1-030-SUB-HVSWG-6.6B	4x10	✓	0.1	0.1	0.1	0.1							✓	
3	D-030-SUB-HVSWG-6.6A	3x16	✓	0.1	0.1	0.1	0.1							✓	
4	D-030-SUB-HVSWG-6.6B	3x16	✓	0.1	0.1	0.1	0.1							✓	
5	P1-030-SUB-PFC-1A	3x10	✓	0.1										✓	
6	D-030-SUB-PFC-1A	3x10	✓	0.1										✓	
7	P1-030-SUB-PFC-1B	3x10	✓	0.1										✓	
8	D-030-SUB-PFC-1B	3x10	✓	0.1										✓	
9	P1-030-PLC-SC-001	3x4	✓	0.1										✓	
10	P2-030-PLC-SC-001	3x4	✓	0.1										✓	
11	P1-030-PLC-SC-002	3x4	✓	0.1										✓	
12	P2-030-PLC-SC-002	3x4	✓	0.1										✓	
13	P1-030-PLC-SC-003	3x4	✓	0.1										✓	
14	P2-030-PLC-SC-003	3x4	✓	0.1										✓	
15	P1-030-PLC-SC-004	3x4	✓	0.1										✓	
16	P2-030-PLC-SC-004	3x4	✓	0.1										✓	

Remarks :-

Reference :-

PETROJET

NAME :

SIGNATURE

DATE

ENPPI

PMC

**Enppi**

EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

**HI POT INSULATION TEST**

INSPECTION REPORT NUMBER

INSPECTION DATE &amp; TIME

ITR NUMBER

SYSTEM NO.:

RFI-159

ITR-EL-0008

DISCIPLINE

SHEET NO

1 OF 1

Item/Tag NO.

Type :-

Core:

Size:

NO.	Description of check	RESULT		
		ACCEPT	REJECT	N/A.
1	No damage of cable has found and maintain insulation resistance	✓		
2	Correct cable type/size/ installed as per approved drawing	✓		
3	Calibration test certificate of testing equipment to be checked.	✓		

Continuity Test :



ACCEPT



REJECT



N/A.

Test Equipment List

INSTRUMENT TYPE:

SERIAL:

SERVICE VOLTAGE:

TEST VOLTAGE:

**Insulation Resistance Test MΩ**

PHASE TO PHASE			PHASES TO ARMOR		
BR-BK	BR-GR	BR-GR	BR-ARM	BK-ARM	GR-ARM

**Hi-Pot test**

Phase BR Test Voltage (1.1... kV)

Phase	TEST VOLTAGE	TIME	CURRENT	
ARM,BK,GR_BR		15 Min	< 100 MA	

Phase BK Test Voltage (1.1... kV)

Phase	TEST VOLTAGE	TIME	CURRENT	
ARM,BR,GR_BK		15 Min	< 100 MA	

Phase GR Test Voltage (1.1... kV)

Phase	TEST VOLTAGE	TIME	CURRENT	
ARM,BR,BK_GR		15 Min	< 100 MA	

**Insulation Resistance Test MΩ**

PHASE TO PHASE			PHASES TO ARMOR		
BR-BK	BR-GR	BR-GR	BR-ARM	BK-ARM	GR-ARM
150 GΩ	178 GΩ	236 GΩ	45.5 GΩ	52 GΩ	61 GΩ

Remarks :

INSPECTION RESULTS:



APPROVE



REJECT



APPROVED W/ COMMENT

	PETROJET	ENPPI	PMC
NAME			
SIGNATURE			
DATE			





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 12.07- Electrical Cables Termination Certificates

**Enppi**

EGPC CRUDE OIL TANK FARM



Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030  
:01251-100-031

Contractor CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001  
Revision No. : 00**REQUEST FOR INSPECTION**

ACTIVITY : cable termination and splicing

NOTIFICATION NO. : PTJ-ELEC-RFI-174 DISCIPLINE : E&amp;I

DATE : 4/22/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	Mes Installation	MODULE 1	28-Mar-21				
1	P-030-SUB-PFC-1A						
2	P-030-SUB-PFC-1B						
3	P-030-EPM1-TR-1						
4	P-030-EPM3-TR-1						
5	P-030-EPM4-TR-1						
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							

**NOTE:**

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-QC-0001



## EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

## CABLE TERMINATION AND SPLICING

INSPECTION REPORT NUMBER

PTJ-ELE-RFI-174

INSPECTION DATE &amp; TIME

ITR NUMBER

ITR-EL-0009

SYSTEM NO.:

DISPLINE

ELEC

SHEET NO

1 OF 1

Item/Tag NO.

Type :-

Core:

Size:

NO.	Description of check	RESULT		
		ACCEPT	REJECT	N/A.
1	Check cable glands are correct type and size as per cable schedule.	✓		
2	Check there are no damages to cores, termination chamber layout is satisfactory, core identification is correct, crimped and pins satisfactory.	✓		
3	Check cable tag is done correctly.	✓		
4	Test and confirm conductor, phase continuity.	✓		
5	Check insulation resistance test (megger) is completed *I	✓		
6	Check Hi-pot test is completed, only for MV/HV cables *II	✓		
7	Connect all cores at both ends and confirm all connections are correct as per termination diagram.	✓		
8	Confirm spare cores, screens are earthed and conform to design drawings/specifications			✓
9	Check enclosure cover is installed, no damages and no bolts are missing	✓		
10	Calibration test certificate of testing equipment to be checked.	✓		

Remarks :

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-EL-0009



**Enppi****EGPC CRUDE OIL TANK FARM**Owner : **Egyptian General Petroleum Corporation (EGPC)**Project No: 01251-100-030  
:01251-100-031Contractor **CONSORTIUM (ENPPI / PETROJET)**Document No: ITR-QC-0001  
Revision No. : 00**REQUEST FOR INSPECTION**ACTIVITY : **CABLE TERMINATION AND TEST**NOTIFICATION NO. : **PTJ-ELE-RFI-169** DISCIPLINE : **ELEC**DATE : **10/04/2021**

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
1	P1-030-SUB-HVSWG-6.6A	SUBSTATION					
2	P1-030-SUB-HVSWG-6.6B	SUBSTATION					
3	D-030-SUB-HVSWG-6.6A	SUBSTATION					
4	D-030-SUB-HVSWG-6.6B	SUBSTATION					
5	C7-030-SUB-HVSWG-6.6A	SUBSTATION					
6	C7-030-SUB-HVSWG-6.6B	SUBSTATION					
7	P1-030-SUB-PFC-1A ✓	SUBSTATION					
8	D-030-SUB-PFC-1A ✓	SUBSTATION					
9	C1-030-SUB-PFC-1A ✓	SUBSTATION					
10	C2-030-SUB-PFC-1A ✓	SUBSTATION					
11	P1-030-SUB-PFC-1B ✓	SUBSTATION					
12	D-030-SUB-PFC-1B ✓	SUBSTATION					
13	C1-030-SUB-PFC-1B ✓	SUBSTATION					
14	C2-030-SUB-PFC-1B ✓	SUBSTATION					
15	C3-030-SUB-LVSWG-1A	SUBSTATION					
16	C3-030-SUB-LVSWG-1B	SUBSTATION					
17	C3-030-SUB-ACUPS-1	SUBSTATION					

**NOTE:**

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-QC-0001





## EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

## CABLE TERMINATION AND SPLICING

INSPECTION REPORT NUMBER

PTJ-ELE-RFI-

INSPECTION DATE &amp; TIME

10/04/2021

ITR NUMBER

ITR-EL-0009

SYSTEM NO.:

DISPLINE

ELEC

SHEET NO

1 OF 1

Item/Tag NO.

For All Cables tages in PTJ-ELE-RFI-

169

Type :-

Core:

Size:

NO.	Description of check	RESULT		
		ACCEPT	REJECT	N/A.
1	Check cable glands are correct type and size as per cable schedule.	✓		
2	Check there are no damages to cores, termination chamber layout is satisfactory, core identification is correct, crimped and pins satisfactory.	✓		
3	Check cable tag is done correctly.	✓		
4	Test and confirm conductor, phase continuity.	✓		
5	Check insulation resistance test (megger) is completed *I	✓		
6	Check Hi-pot test is completed, only for MV/HV cables *II			
7	Connect all cores at both ends and confirm all connections are correct as per termination diagram.	✓		✓
8	Confirm spare cores, screens are earthed and conform to design drawings/specifications			✓
9	Check enclosure cover is installed, no damages and no bolts are missing	✓		
10	Calibration test certificate of testing equipment to be checked.	✓		



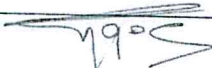
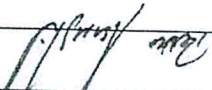
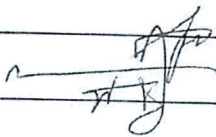
Remarks :

\*I : ITR-EL-006A/B

\*II : ITR-EL-008



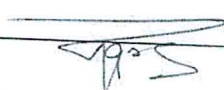
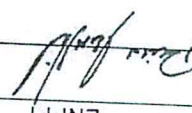
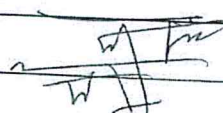
NAME :	PETROJET	ENPPI	PMC
SIGNATURE			
DATE			

ITR-EL-0009

 		<b>EGPC CRUDE OIL TANK FARM</b>		<b>EGPC</b>	
<b>Owner :</b> Egyptian General Petroleum Corporation (EGPC)		<b>Contractor :</b> CONSORTIUM (ENPPI / PETROJET)		Project No: 01251-100-030 Document No: ITR-QC-0001 Revision No: 00	
<b>REQUEST FOR INSPECTION</b>					
<b>ACTIVITY :</b> HIGH VOLTAGE Panel Installation					
<b>NOTIFICATION NO. :</b> PTJ-RFI-EL-163 B		<b>DISCIPLINE :</b> ELECTRICAL		<b>DATE :</b> 4/4/2021	
NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION	REMARKS
1	POWER FACTOR PANEL INSALLATION	AGROUD MODULE 1 SUB BUILDING	4-Apr-21	ENPPI	
	030-SUB-PEC-1			PMO	
<b>NOTE:</b> Inspection result : A - Approved B - Reject C - Approved with Comment					
→ All Accommodation must be installed					
NAME :	PETROJET	ENPPI	PMO		
SIGNATURE					
DATE					

ITR-QC-0001



			
<b>INSPECTION AND TEST REPORT FOR</b> <b>LVSWG AND PANEL INSTALLATION</b>			
INSPECTION REPORT NUMBER PTJ-ELE-RFP-163 B		DOCUMENT NO ITR-EL-0012	
INSPECTION DATE & TIME 16/3/16		DISCIPLINE ELECTRICAL	
Tag No.		AREA DESCRIPTION AGROUD MODULE 2 SUB BUILDING	
Serial No.		SHEET NO	
NO.	INSPECTION	RESULT	N/A
1	Verify that equipment name plates are according to the corresponding drawing	✓	ACCEPT
2	Inspect physical and mechanical condition of the equipment and all components for clear damage	✓	ACCEPT
3	Verify appropriate anchorage, required area clearances, physical damage, and correct alignment and cleanliness	✓	ACCEPT
4	Inspect all doors, panels, and sections for paint, dents, scratches, fit, and missing hardware	✓	ACCEPT
5	Verify that the barriers and covers are installed correctly	✓	ACCEPT
6	Verify that filters are in place and all ventilation openings are clear from any kind of obstacles	✓	ACCEPT
7	Verify that main bus bar is connected between the cells	✓	ACCEPT
8	Verify that the earth bar is connected between the cells and connected to the earth	✓	ACCEPT
9	Verify the tightness of accessible bolted electrical connections using the calibrated torque-wrench method	✓	ACCEPT
10	After tightening each electrical connection to the appropriate torque, apply some Varnish between the nut and the screw (or else, between the screw's head and the Confirm that lubricants have been correctly applied at the recommended locations	N/A	N/A
11	Inspect all mechanical indicating devices for correct operation	N/A	N/A
12	Verify that draw out disconnecting contacts and interlocks function correctly	N/A	N/A
13	Verify that fuse and/or circuit breaker size and type correspond to drawings	N/A	N/A
14	Verify that current and potential transformer ratios correspond to drawings	N/A	N/A
15	Verify that all the interconnection control wires between the cells have been made correctly reference to the control drawings	N/A	N/A
16	Verify that customer connections to remote power, operators, interlocks, and indicators have been made	N/A	N/A
<b>REMARKS:</b> - All accessories must be installed			
<b>REFERENCE DOCUMENTS:</b>			
NAME:	PETROJET	ENPPI	PMC
SIGNATURE			
DATE			



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 12.08- FAT Reports & Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 12.09- SAT Reports & Certificates

( خلاص بجدارة خدمة العملاء )

رقم البلاغ / الشكوى :

تاريخ المأمورية : ٢٠١٨ / ١١ / ٢٠

Capacitor Bank :

المنتج

أمر التوريد : ٢٠١٨ / ١١ / ٢٠

2 ( main incoming (LBS + 3 step)

مواصفات المنتج

Enppi

العميل

ممنسلة اللوحات

مقطع عجزود 2 & 1

العملية

الموقع

الموقع

وصف العطل ( حسب الحالة ) :

اسباب حدوث العطل :

الأعمال المنفذة / الأصناف المطلوبة : إنه في الحظير الموافق ١٨ / ١١ / ٢٠١٨ تم وضع

جود وأحلاف ليار على حصة عجزود 1 كما عجزود 2 بعد إمراد

الاحضار واللازمة قبل أحلاف ليار ( مرفق صورة من الحظير )

والتأكد أني نعمل بشكل سليم .

يوجد عدد (٤) لدينا عجزود (١١) حجاز (٢٥٥٥) تلف  
( L.S. Door )

ملحوظة : يتم الرجوع لإدارة الشركة للموافقة على أي توريدات أو أعمال صيانة أو قطع غيار خارج الضمان أو ناتجة عن سوء استخدام العميل داخل الضمان

عن الشركة

عن العميل

الاسم	الوظيفة	التوقيع
م. أحمد السيد	أ. د. ع	

الاسم	الوظيفة	التوقيع
م. أحمد السيد	Enppi	
م. أحمد السيد	PPC	

تليفون العميل :

<p>خدمة العملاء : مدينة ٦ أكتوبر المنطقة الصناعية الرابعة قطعة (27) موبايل: 01022993572 ف: 38330751 م. أحمد السيد</p>	<p>المصنع : مدينة 6 أكتوبر المنطقة الصناعية الرابعة قطعة (27) ت: 38331015 ف: 38331001</p>
<p>البريد الإلكتروني : after.sales@tepc-group.com</p>	<p>المبيعات : 1 شارع أحمد الشاطوري - الدقي ت: 33374555 - 37607972</p>





030-SUB-PFC-1A

## SAT Procedure For PFC

Customer	ENPPI
Project	EGPC Crude oil Tank Farm Project
Order No.	1251-100-510-50-31
Item No.	1.8,2.8,3.8,4.8,5.8,6.8,7.8
QTY	14
Serial No.	-
Switchboard Type	MV Capacitors Bank
Date	12/7/2020

## Technical Data



Rated Voltage	7.2KV
Service Voltage	6.6KV
Current	
Control Voltage	110VDC

## Main Components

Component No. / Qty	Component Name

Enppi : Ahmed Kadeem

PPC : Mohamed Ibrahim

TEPCO :   
18/11/2021  
18/11/2021  


The Following Tests Are Performed Before StartUp

**1 – Visual Inspection**

NO.	Test	Result
1	Check that all doors are open and closed well	Pass
2	Check installation of cover on unused openings	Pass
3	Check all bolts of electrical part should be indicated after tightening using black markers	Pass
4	Check cable entry area and fixation of cable support	Pass
5	Check fixation of capacitors	Pass
6	Check fixation of current transformer and reactors	Pass
7	Ensure all labels on panels	Pass
8	Check finish painting	Pass
9	Check of all internal control wiring	Pass

**2 – Mechanical Operation**

NO.	Test	Result
1	Isolating switch manually	Pass
2	Earthing switch & interlocks with isolating switch	Pass
3	Any other mechanical interlock	Pass

**3 – Electrical Operation**

NO.	Test	Result
1	Function of steps according to truth table	Pass
2	Low gas pressure alarm & low gas pressure block	Pass
3	Fan with thermostat	NA
4	Indication lamps	* Pass

\* One Limit Switch for Control Compartment of Cell-4 is damaged and need to be replaced.



5	Any other electrical interlock	Pass
6	Insulation resistance measurement (megger test)	Pass

> 500 G.Ω

**4 - Noise Test**

NO.	Test	Result
1	Noise test will be verified during startup	Pass

\* PFC unit start-up was done successfully and unit was put in Service in Automatic mode  
Manual

\* Automatic mode operation shall be verified during actual loading



030-SUB-PFC-1B

## SAT Procedure For PFC

Customer	ENPPI
Project	EGPC Crude oil Tank Farm Project
Order No.	1251-100-510-50-31
Item No.	1.8,2.8,3.8,4.8,5.8,6.8,7.8
QTY	14
Serial No.	-
Switchboard Type	MV Capacitors Bank
Date	12/7/2020

## Technical Data

Rated Voltage	7.2KV
Service Voltage	6.6KV
Current	
Control Voltage	110VDC

## Main Components

Component No. / Qty	Component Name

ENPPI : Ahmed Kadeem

PFC : Mohamed Ibrahim

TEPCO : 42091  
18/11/2021A. Kadeem  
18/11/2021

The Following Tests Are Performed Before StartUp

## 1 – Visual Inspection

NO.	Test	Result
1	Check that all doors are open and closed well	Pass
2	Check installation of cover on unused openings	Pass
3	Check all bolts of electrical part should be indicated after tightening using black markers	Pass
4	Check cable entry area and fixation of cable support	Pass
5	Check fixation of capacitors	Pass
6	Check fixation of current transformer and reactors	Pass
7	Ensure all labels on panels	Pass
8	Check finish painting	Pass
9	Check of all internal control wiring	Pass

## 2 – Mechanical Operation

NO.	Test	Result
1	Isolating switch manually	Pass
2	Earthing switch & interlocks with isolating switch	Pass
3	Any other mechanical interlock	Pass

## 3 – Electrical Operation

NO.	Test	Result
1	Function of steps according to truth table	Pass
2	Low gas pressure alarm & low gas pressure block	Pass
3	Fan with thermostat	NA
4	Indication lamps	* Pass

\* One Limit Switch for Control Compartment of Cell-2 is damaged and needs to be replaced

Note :- Space heater at incoming Cell was found damaged and needs to be Replaced



**SAT Procedure For PFC**

5	Any other electrical interlock	Pass
6	Insulation resistance measurement (megger test)	Pass

> 500 GΩ

**4 – Noise Test**

NO.	Test	Result
1	Noise test will be verified during startup	Pass

\* PFC unit start-up was done successfully and unit was put in service in Automatic mode  
Manual

\* Automatic mode operation shall be verified during actual loading



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 12.10- Electrical Pre-Commissioning Check Lists

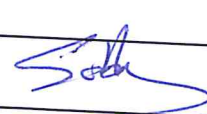
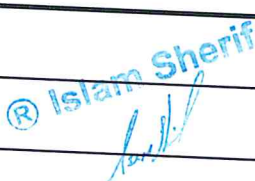
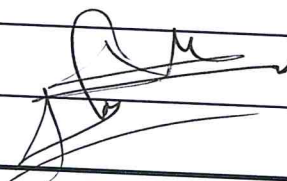
## PRE-COMMISSIONING CHECK LIST LOW VOLTAGE CABLES EL-30 A

<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)	
<b>PROJECT NUMBER</b> : 1251-100	<b>DISCIPLINE</b> : Electrical
<b>SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SYSTEM ID</b> : 030-EL-003
<b>SUB-SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SUB-SYSTEM ID</b> : 030-EL-003
<b>ITEM TAG No.</b> : 030-SUB-PFC-1B	<b>AREA</b> : 30
<b>REF. DWGs/DOCs</b> :	

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.		
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables (power/ control) are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, tightness, termination and joints of cables are correctly executed.	✓	
7	Check where conductors have been terminated using crimped connections; ensure the correct size and type of crimping lugs.	✓	
8	Check that the bending radius of cables is not less than the minimum established.	✓	
9	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
10	Tie wraps to be used for cable and wires fixation.	✓	
11	Cable connections shall be torque tested.	✓	

### REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST LOW VOLTAGE CABLES EL-30 A


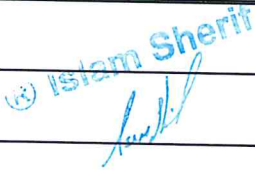
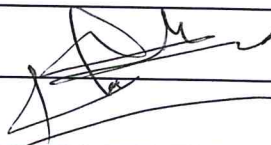
<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)	
<b>PROJECT NUMBER</b> : 1251-100	<b>DISCIPLINE</b> : Electrical
<b>SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SYSTEM ID</b> : 030-EL-003
<b>SUB-SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SUB-SYSTEM ID</b> : 030-EL-003
<b>ITEM TAG No.</b> : 030-SUB-PFC-1B	<b>AREA</b> : 30
<b>REF. DWGs/DOCs</b> :	

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Check that buried cables are correctly covered and protected.	N/A	
13	Trench markers to be checked w.r.t approved documents.	N/A	
14	Check cable glands for tightness & check the correct type of gland has been used for the size and type of installed cables.	✓	
15	Inspect cable laid in trenches, segregation and protection.	MA	
16	Cables to be tested (continuity/insulation resistance). (*)	✓	
17	Equipment test report and inspection certificate to be-checked.	✓	
18	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
19	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

(\*) Refer to table (III).

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



**PRE-COMMISSIONING CHECK LIST**  
**LOW VOLTAGE CABLES**  
**EL-30 A**

**INSULATION TEST**  
**LOW VOLTAGE CABLES**

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
1000V	1000V	200

TABLE [III]

**NOTES:**

Manufacture’s test voltage & minimum values for insulation resistance should be referenced.



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : 030-SUB-PFC-1B


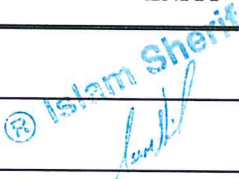
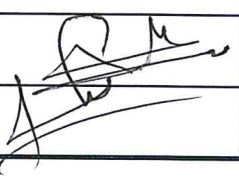
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : 030-SUB-PFC-1B

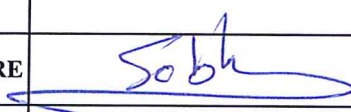
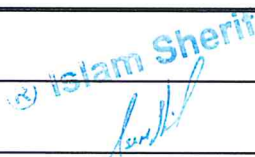
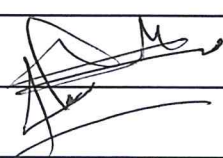
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	N/A	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	N/A	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



**PRE-COMMISSIONING CHECK LIST**  
**MEDIUM VOLTAGE CABLES**  
**EL-31 A**

**INSULATION TEST**

**EL-31 A**

<b>CABLE VOLTAGE LEVEL</b>	<b>D.C TEST VOLTAGE</b>	<b>MINIMUM INSULATION RESISTANCE (M.OHMS).</b>
3.3kV	2500V	200
6.6kV & Above	5000V	200

**TABLE [I]**

**NOTES:**



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : C1-030-SUB-PFC-1B

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		® Islam Sherif	
SIGNATURE			
DATE			


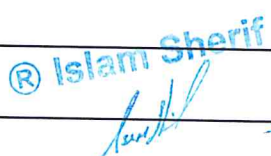
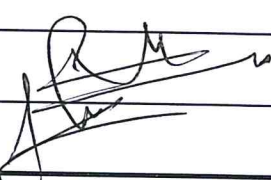
## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)	
<b>PROJECT NUMBER</b> : 1251-100	<b>DISCIPLINE</b> : Electrical
<b>SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SYSTEM ID</b> : 030-EL-003
<b>SUB-SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SUB-SYSTEM ID</b> : 030-EL-003
<b>ITEM TAG No.</b> : C1-030-SUB-PFC-1B	<b>AREA</b> : 30
<b>REF. DWGs/DOCs</b> :	

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

### REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES

EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100 **DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power Factor correction System **SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power Factor correction System **SUB-SYSTEM ID** : 030-EL-003


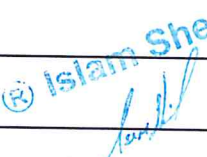

**ITEM TAG No.** : C2-030-SUB-PFC-1A **AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

### REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A


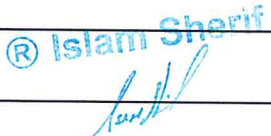
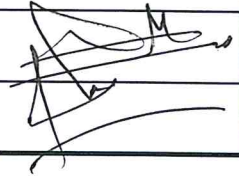
<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)	
<b>PROJECT NUMBER</b> : 1251-100	<b>DISCIPLINE</b> : Electrical
<b>SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SYSTEM ID</b> : 030-EL-003
<b>SUB-SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SUB-SYSTEM ID</b> : 030-EL-003
<b>ITEM TAG No.</b> : C2-030-SUB-PFC-1A	<b>AREA</b> : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	—	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



**PRE-COMMISSIONING CHECK LIST**  
**MEDIUM VOLTAGE CABLES**  
**EL-31 A**

**INSULATION TEST**

**EL-31 A**

<b>CABLE VOLTAGE LEVEL</b>	<b>D.C TEST VOLTAGE</b>	<b>MINIMUM INSULATION RESISTANCE (M.OHMS).</b>
3.3kV	2500V	200
6.6kV & Above	5000V	200

**TABLE [I]**

**NOTES:**





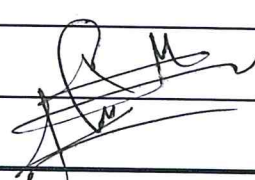
## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31A

<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)	
<b>PROJECT NUMBER</b> : 1251-100	<b>DISCIPLINE</b> : Electrical
<b>SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SYSTEM ID</b> : 030-EL-003
<b>SUB-SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SUB-SYSTEM ID</b> : 030-EL-003
<b>ITEM TAG No.</b> : C2-030-SUB-PFC-1B	<b>AREA</b> : 30
<b>REF. DWGs/DOCs</b> :	

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

### REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

<b>COMPANY</b>	<b>CONST. CONTRACTOR</b>	<b>ENPPI</b>	<b>CUSTOMER</b>
<b>NAME</b>		® Islam Sherif	
<b>SIGNATURE</b>			
<b>DATE</b>			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : C2-030-SUB-PFC-1B


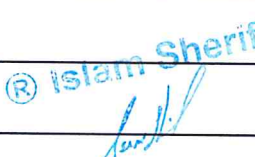
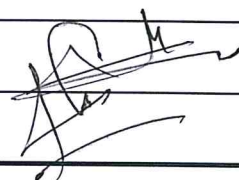
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



**PRE-COMMISSIONING CHECK LIST  
MEDIUM VOLTAGE CABLES  
EL-31 A**

**INSULATION TEST**

**EL-31 A**

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

**TABLE [I]**

**NOTES:**

## PRE-COMMISSIONING CHECK LIST POWER FACTOR IMPROVEMENT EQUIPMENT EL-21 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : 030-SUB-PFC-1A



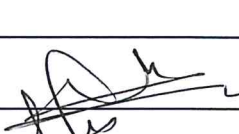
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check equipment assembly for alignment, levelness and foundation fixing details.	✓	
3	Check installation of capacitor bank in accordance with relevant drawing.	✓	
4	Verify nameplate details against data sheet.	✓	
5	Check the capacitor banks for mechanical damage.	✓	
6	Check the correct ratings of main, aux. fuses, circuit breaker and relays w.r.t approved documents.	✓	
7	Check visually the connection, polarity and ratio of C.T's.	✓	
8	Check connection and data of voltage Transformers.	✓	
9	Remove any accidental connections between phases and from phases to ground.	✓	
10	Check all internal connections related to the capacitor banks and to be according to the approved documents and supplier recommendations.	✓	
11	Check equipment earthing connections.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST POWER FACTOR IMPROVEMENT EQUIPMENT EL-21 A

<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)	
<b>PROJECT NUMBER</b> : 1251-100	<b>DISCIPLINE</b> : Electrical
<b>SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SYSTEM ID</b> : 030-EL-003
<b>SUB-SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SUB-SYSTEM ID</b> : 030-EL-003
<b>ITEM TAG No.</b> : 030-SUB-PFC-1A	<b>AREA</b> : 30
<b>REF. DWGs/DOCs</b> :	

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	All compartments to be cleaned internally and externally.	✓	
13	Resistance test of busbar bolted connections (Between phases and phases to ground) (*)	N/A	
14	Voltage withstand test of both the main and aux. circuits, this shall be carried out between phases and phases to ground (**)	N/A	
15	Check equipment anti condensation heaters and test insulation resistance.(**)	N/A	
16	Continuity tests shall be carried out on power factor bus- bar connections and earth system joints in order to check their tightness.	✓	
17	Equipment test report and inspection certificate to be-checked.	✓	
18	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
19	Calibration test certificate of testing equipment to be checked.	✓	


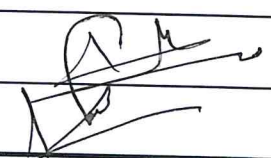
**REMARKS AND OBSERVATIONS :**

(\*) Refer to table [II]

(\*\*) 500 V megger, min. 10 MΩ (Manufacture's test voltage & minimum values should be referenced)

(\*\*\*) Refer to table [I]

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST POWER FACTOR IMPROVEMENT EQUIPMENT EL-21 A

### VOLTAGE WITHSTAND TEST

#### TABLE OF TEST VOLTAGES

EQUIPMENT RATED VOLTAGE (kV)	TEST VOLTAGE (KV)
0.66	2
3.3	8.6
6.6	15.2
11	24
15	32
22	46

TABLE [I]

#### NOTES:

All current transformer secondary's shall be short circuit for the duration of the test.  
All voltage transformers shall be disconnected by removal of primary and secondary fuses for the duration of the test.  
Test shall be carried out with all circuit breakers, isolators and switches closed, but with all the cable cores disconnected.



**PRE-COMMISSIONING CHECK LIST  
POWER FACTOR IMPROVEMENT EQUIPMENT  
EL-21 A**

**INSULATION TEST**

**TABLE OF MINIMUM TEST VOLTAGES**

<b>EQUIPMENT RATED VOLTAGE (kV)</b>	<b>TEST VOLTAGE (V) (ONE MINUTE)</b>	<b>MINIMUM INSULATION RESISTANCE (M.OHMS)</b>
33	5000	200
22	5000	200
11	5000	200
6.6	1000	200
3.3	1000	200
0.6	1000	100
0.4	1000	100
CONTROL WIRING	500	10

**TABLE [II]**

**NOTES:**

Manufacture's test voltage & minimum values for insulation resistance should be referenced



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : 030-SUB-PFC-1A

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : 030-SUB-PFC-1A


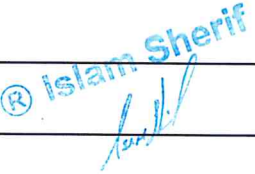
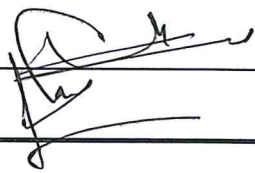
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	N/A	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	N/A	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

**NOTES:**



## PRE-COMMISSIONING CHECK LIST LOW VOLTAGE CABLES EL-30 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : 030-SUB-PFC-1A

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables (power/ control) are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, tightness, termination and joints of cables are correctly executed.	✓	
7	Check where conductors have been terminated using crimped connections; ensure the correct size and type of crimping lugs.	✓	
8	Check that the bending radius of cables is not less than the minimum established.	✓	
9	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
10	Tie wraps to be used for cable and wires fixation.	✓	
11	Cable connections shall be torque tested.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST LOW VOLTAGE CABLES EL-30 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : 030-SUB-PFC-1A

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Check that buried cables are correctly covered and protected.	N/A	
13	Trench markers to be checked w.r.t approved documents.	N/A	
14	Check cable glands for tightness & check the correct type of gland has been used for the size and type of installed cables.	✓	
15	Inspect cable laid in trenches, segregation and protection.	N/A	
16	Cables to be tested (continuity/insulation resistance). (*)	✓	
17	Equipment test report and inspection certificate to be-checked.	✓	
18	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
19	Calibration test certificate of testing equipment to be checked.	✓	

### REMARKS AND OBSERVATIONS :

(\*) Refer to table (III).

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST LOW VOLTAGE CABLES EL-30 A

### INSULATION TEST LOW VOLTAGE CABLES

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
1000V	1000V	200

TABLE [III]

#### NOTES:

Manufacture's test voltage & minimum values for insulation resistance should be referenced.

## PRE-COMMISSIONING CHECK LIST POWER FACTOR IMPROVEMENT EQUIPMENT EL-21 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : 030-SUB-PFC-1B

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check equipment assembly for alignment, levelness and foundation fixing details.	✓	
3	Check installation of capacitor bank in accordance with relevant drawing.	✓	
4	Verify nameplate details against data sheet.	✓	
5	Check the capacitor banks for mechanical damage.	✓	
6	Check the correct ratings of main, aux. fuses, circuit breaker and relays w.r.t approved documents.	✓	
7	Check visually the connection, polarity and ratio of C.T's.	✓	
8	Check connection and data of voltage Transformers.	✓	
9	Remove any accidental connections between phases and from phases to ground.	✓	
10	Check all internal connections related to the capacitor banks and to be according to the approved documents and supplier recommendations.	✓	
11	Check equipment earthing connections.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST POWER FACTOR IMPROVEMENT EQUIPMENT EL-21 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : 030-SUB-PFC-1B

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	All compartments to be cleaned internally and externally.	✓	
13	Resistance test of busbar bolted connections (Between phases and phases to ground) (*)	N/A	
14	Voltage withstand test of both the main and aux. circuits, this shall be carried out between phases and phases to ground (**)	N/A	
15	Check equipment anti condensation heaters and test insulation resistance. (**)	N/A	
16	Continuity tests shall be carried out on power factor bus- bar connections and earth system joints in order to check their tightness.	✓	
17	Equipment test report and inspection certificate to be-checked.	✓	
18	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
19	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

(\*) Refer to table [II]

(\*\*) 500 V megger, min. 10 MΩ (Manufacture's test voltage & minimum values should be referenced)

(\*\*\*) Refer to table [I]

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



**PRE-COMMISSIONING CHECK LIST  
POWER FACTOR IMPROVEMENT EQUIPMENT  
EL-21 A**

**VOLTAGE WITHSTAND TEST**

**TABLE OF TEST VOLTAGES**

<b>EQUIPMENT RATED VOLTAGE (kV)</b>	<b>TEST VOLTAGE (KV)</b>
0.66	2
3.3	8.6
6.6	15.2
11	24
15	32
22	46

**TABLE [I]**

**NOTES:**

All current transformer secondary's shall be short circuit for the duration of the test.

All voltage transformers shall be disconnected by removal of primary and secondary fuses for the duration of the test.

Test shall be carried out with all circuit breakers, isolators and switches closed, but with all the cable cores disconnected.



**PRE-COMMISSIONING CHECK LIST  
POWER FACTOR IMPROVEMENT EQUIPMENT  
EL-21 A**

**INSULATION TEST**

**TABLE OF MINIMUM TEST VOLTAGES**

<b>EQUIPMENT RATED VOLTAGE (kV)</b>	<b>TEST VOLTAGE (V) (ONE MINUTE)</b>	<b>MINIMUM INSULATION RESISTANCE (M.OHMS)</b>
33	5000	200
22	5000	200
11	5000	200
6.6	1000	200
3.3	1000	200
0.6	1000	100
0.4	1000	100
CONTROL WIRING	500	10

**TABLE [III]**

**NOTES:**

Manufacture's test voltage & minimum values for insulation resistance should be referenced



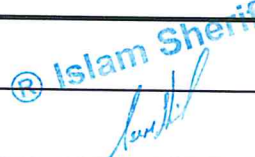
## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31A

<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)	
<b>PROJECT NUMBER</b> : 1251-100	<b>DISCIPLINE</b> : Electrical
<b>SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SYSTEM ID</b> : 030-EL-003
<b>SUB-SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SUB-SYSTEM ID</b> : 030-EL-003
<b>ITEM TAG No.</b> : D-030-SUB-PFC-1A	<b>AREA</b> : 30
<b>REF. DWGs/DOCs</b> :	

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

### REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : D-030-SUB-PFC-1A


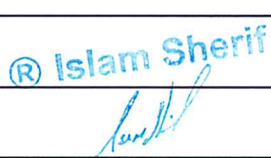

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES *Low* EL-31A

PROJECT TITLE : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

PROJECT NUMBER : 1251-100

DISCIPLINE : Electrical

SYSTEM NAME : Substation 6.6KV High Voltage Power  
Factor correction System

SYSTEM ID : 030-EL-003

SUB-SYSTEM NAME : Substation 6.6KV High Voltage Power  
Factor correction System

SUB-SYSTEM ID : 030-EL-003

ITEM TAG No. : D-030-SUB-PFC-1B

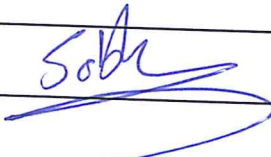
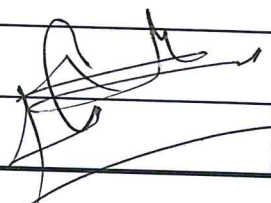
AREA : 30

REF. DWGs/DOCs :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES *Low* EL-31A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : D-030-SUB-PFC-1B


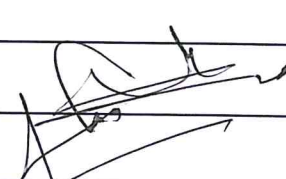
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

**NOTES:**

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : P1-030-SUB-PFC-1B

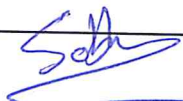
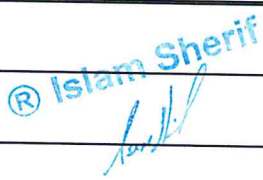
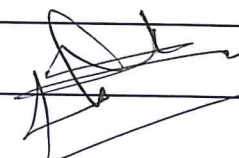
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : P1-030-SUB-PFC-1B


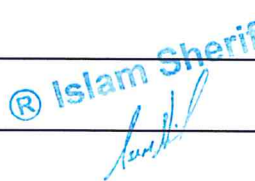
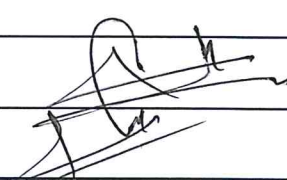
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

## PRE-COMMISSIONING CHECK LIST

### MEDIUM VOLTAGE CABLES

*Low*  
EL-31A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : P1-030-SUB-PFC-1A


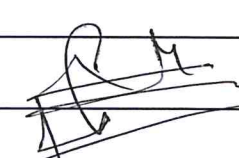
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : P1-030-SUB-PFC-1A

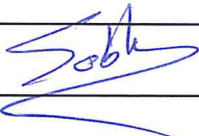
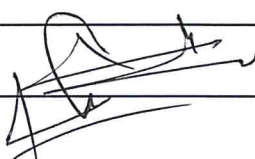
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:




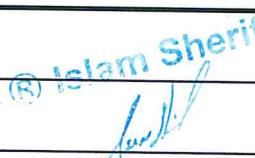

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)	
<b>PROJECT NUMBER</b> : 1251-100	<b>DISCIPLINE</b> : Electrical
<b>SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SYSTEM ID</b> : 030-EL-003
<b>SUB-SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SUB-SYSTEM ID</b> : 030-EL-003
<b>ITEM TAG No.</b> : P-030-SUB-PFC-1A	<b>AREA</b> : 30
<b>REF. DWGs/DOCs</b> :	

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : P-030-SUB-PFC-1A

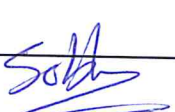
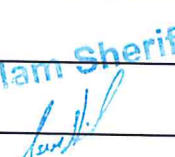

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



**PRE-COMMISSIONING CHECK LIST**  
**MEDIUM VOLTAGE CABLES**  
**EL-31 A**

**INSULATION TEST**

**EL-31 A**

<b>CABLE VOLTAGE LEVEL</b>	<b>D.C TEST VOLTAGE</b>	<b>MINIMUM INSULATION RESISTANCE (M.OHMS).</b>
3.3kV	2500V	200
6.6kV & Above	5000V	200

**TABLE [I]**

**NOTES:**



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : P-030-SUB-PFC-1B


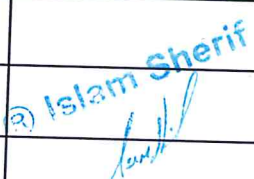
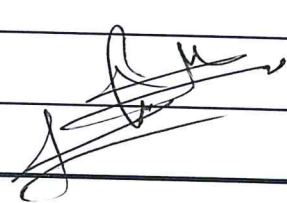
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)	
<b>PROJECT NUMBER</b> : 1251-100	<b>DISCIPLINE</b> : Electrical
<b>SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SYSTEM ID</b> : 030-EL-003
<b>SUB-SYSTEM NAME</b> : Substation 6.6KV High Voltage Power Factor correction System	<b>SUB-SYSTEM ID</b> : 030-EL-003
<b>ITEM TAG No.</b> : P-030-SUB-PFC-1B	<b>AREA</b> : 30
<b>REF. DWGs/DOCs</b> :	

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : C1-030-SUB-PFC-1A

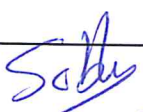
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SYSTEM ID** : 030-EL-003

**SUB-SYSTEM NAME** : Substation 6.6KV High Voltage Power  
Factor correction System

**SUB-SYSTEM ID** : 030-EL-003

**ITEM TAG No.** : C1-030-SUB-PFC-1A



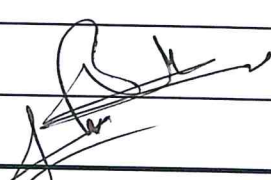
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			





**PRE-COMMISSIONING CHECK LIST**  
**MEDIUM VOLTAGE CABLES**  
**EL-31 A**

**INSULATION TEST**

**EL-31 A**

<b>CABLE VOLTAGE LEVEL</b>	<b>D.C TEST VOLTAGE</b>	<b>MINIMUM INSULATION RESISTANCE (M.OHMS).</b>
3.3kV	2500V	200
6.6kV & Above	5000V	200

**TABLE [I]**

**NOTES:**

System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 12.11- Electrical Supplier Check Lists & Reports



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

### 13- Electrical Commissioning

System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

### 13.01- Electrical -Commissioning Check Lists



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 13.02- Electrical Supplier Check Lists & Reports



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 14- Red Marked-up Drawings



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 14.01- P&ID



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 14.02- Instrumentation Drawings



System ID	030-EL-003
System Description	Substation 6.6KV High Voltage Power Factor correction System

## 14.03- Electrical Drawings